A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE ON HOTFLUSHES EXPERIENCE OF MENOPAUSAL WOMEN IN A SELECTED COMMUNITY AREA IN SULUR AT COIMBATORE

M.Sc (NURSING) DEGREE EXAMINATION

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A Study to Assess the Effectiveness of Deep Breathing Exercise on Hotflushes Experience of Menopausal Women in a Selected Community Area in Sulur at Coimbatore

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ABSTRACT

A study to assess the effectiveness of deep breathing exercise on hot flushes experience of menopausal women in a selected community area in Sulur at Coimbatore.

The aim of the study was to assess the effectiveness of deep breathing exercise on hotflushes and psychological feeling expressed by the menopausal women.

The conceptual framework used in this study was based on Modified Titler effectiveness model. The study adopted a evaluative and experimental approach. A convenient sample of 30 menopausal women aged 45-65 years were selected from rural area of Sulur. Among 30 menopausal women 15 menopausal women were under experimental group and 15 menopausal women were under control group. The data was collected by a questionnaire (Interview schedule) before intervention , on 15^{th} day and 30^{th} day; 3-point rating scale was used to rate the symptoms and psychological feeling.

The experimental group received deep breathing exercise, daily morning and evening for 15 minutes, where as control group, were not received deep breathing exercise and observed subsequently. The data was collected for 30 days. The data was analyzed using descriptive and inferential statistics.

The findings of the study showed that, majority of menopausal women were under age group of 61-65 years. There was significant difference between experimental and control group after intervention. (t test = 20.56, P> 0.05). Degree of symptoms was categorized as mild, moderate and severe. After teaching exercise the symptoms were reduced from moderate to mild, ranges from 53.33%- 100%.

Relationship between the demographic variables like family, occupation and age of attaining menopause was seen. Statistically the

relationship was significant for occupation ($\chi 2 = 4.7$,df -1, $P < 0.05$) and age of attaining menopause ($\chi 2 = 4.7$, df -1, $P < 0.05$) and it showed non-significance in family. In control group demographic variable and degree of symptom showed non-significance in all areas such as family, occupation and age of attaining menopause.

This study concludes that Deep breathing exercise reduce hotflushes symptoms and prevent menopausal women from severity of hotflushes. So the menopausal women will be psychologically stable and relieved from physical discomfort

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INTRODUCTION

BACKGROUND OF THE STUDY

Women experience various turning points in their life cycle, which may be developmental or transitional. Midlife is one such transitional period which brings about important changes in women. Menopause is a unique stage of female reproductive life cycle, a transition from reproductive to non-reproductive stage. Advanced middle age extend from age fifty to sixty, the onset is marked by physical and mental changes. At sixty there is usually a decline in physical vigor, often accompanied by decrease in mental alertness. Women go through the menopause, at which time the menstrual period cease and they lose their child bearing ability.

Menopause is the permanent cessation of reproductive fertility some time before the end of the natural lifespan. The term was originally used to describe this reproductive change in human females, where the end of fertility was traditionally indicated by the permanent stopping of menstruation or "menses". The word "menopause" literally means the "end of monthly cycles" from the Greek words *pausis* (cessation) and the word root *men* (month) **(Wikipedia.com).**

Menopause is a normal part of life, just like puberty. It is the time of last period, but symptoms can begin several years earlier. Some symptoms of menopause can last for months or years after. Changing levels of estrogen and progesterone, which are two female hormones made in ovaries, might lead to these symptoms.

Menopause occurs naturally or is induced by surgery, chemotherapy or radiation. Naturally menopause is recognized after 12 months of amenorrhea that is not associated with a pathologic cause. The average age of menopause in the United States is 51 years and can vary normally between 40 and 58 years. The menopausal transition can span over several years and often begins with

variations in menstrual cycle length in response to rising levels of follicle stimulating hormone (FSH). The mean age of onset of the menopausal transition is 47.5 years and commonly lasts approximately 4 to5 years. Stages and nomenclature of the menopausal transition were defined by experts in 2001 at the **Stages of Reproductive aging workshops** (STRAW). The group recognized seven stages of the reproductive aging continuum and acknowledged that most women do not progress precisely through each stage. There stages are also described by the following terms.

- Premenopause: The time up to the beginning of the perimenopause but is also used to define the time up to the last menstrual period.

- Perimenopause: The time around menopause during which menstrual cycle and endocrine changes are occurring but 12 months of amenorrhea has not yet occurred.

- Postmenopause: Begins at the time of the last menstrual period, although not recognized until after 12 months of amenorrhea.

Menopausal women experience menopause differently, as the menopausal symptoms may vary from one person to another person. Common menopausal symptoms are hot flushes, mood swings, headache, insomnia, vaginal dryness, fatigue, palpitation, itching, weight gain and decreased libido. Among this some are very common and some are less common.

To minimise discomfort of menopausal symptoms, menopausal women were asked to dress lightly, use cotton clothes, avoid coffee, tea, spicy foods. Other management to reduce menopausal symptom are deep breathing exercise, eat soy foods and perform kegel exercise to strengthen the muscles of vagina.

Rae Haining (2009) in her article insisted that hot flushes are most common symptom of menopause affecting 85% of menopausal women. A hot flush is a sudden feeling of heat in the upper part of body, face and neck as it becomes flushed. Hot flush is well known as the classic menopausal symptom and affects 60-85% of menopausal women and why it occurs is because

estrogen a female sex hormone is required to maintain a balanced body temperature. When estrogen levels are suddenly reduced due to menopause, body is unable to maintain a balanced body temperature. During a hot flash, endorphin levels plummet.

Hot flushes is a vasomotor symptoms and vary immensely in both their severity and duration, for many women, they occur occasionally and do not cause much distress, but for about 20% they can be severe and can cause significant interference with work, sleep and quality of life. Most hot flashes last between 30 seconds and 10 minutes. Flashes may be very mild or strong and disturb the sleep at night (called night sweats). Red blotches may appear on chest, back and arms. Heavy sweating and cold shivering can occur. Hot flushes usually begin in the face and chest and appear elsewhere such as back of the neck and it spreads throughout the whole body, the surface of the skin especially on the face become hot to touch and sensation of heat is often accompanied by reddening of face.

Researches in a variety of fields showed that breathing deeply can improve health in many ways as it increases the vitality and promotes relaxation. The same way deep breathing can also reduce the severity of hotflushes as exercise decreases the luteinizing hormone (LH) and follicle-stimulating hormone (FSH) by feeding the hypothalamus and causes endorphin levels to rise. Controlled deep breathing exercise reduces hot flushes. Taking 6 to 8 deep breaths per minute for 15 minutes, twice a day can decrease hot flushes by 40 percent. This technique can be helpful at the onset of a hot flush to shorten its duration or intensity. In deep, abdominal breathing, the downward and upward movements of the diaphragm, combined with the outward and inward movements of the belly, ribcage, and lower back, help to massage and detoxify inner organs, promote blood flow and peristalsis, and pump the lymph more efficiently through our lymphatic system

Debra Barton in **(2002)** found that deep breathing can reduce hot flushes by reducing core body temperature which rises before hotflushes. So to keep body temperature down she insisted to practice deep slow breathes twice a

day and she found that deep breathing exercise reduce hotflushes about 40 percent. In article by **Carol Krucoff** of Washington points out that the frequency of hot flushes can be reduced by about 50 percent through slow deep breathing. **Astrid P (2007)** recommends to practice the slow deep breathing technique for 15 minutes, two times a day on a regular basis for atleast one month.

NEED FOR THE STUDY

Many women arrive at their menopause years without knowing anything about what they might expect or when or how the process happen and how long it might take. As a result, a woman who happens to undergo hot flushes with large number of different effects may become confused and anxious, fearing that something abnormal is happening to her.

In the western world, the most typical age range for menopause is between the ages of 45 and 55 and the average age for last period is 51 years. In some developing countries such as India and Philippines, the median age of natural menopause is considerably earlier at 44 years.

Hot flushes are common symptom among menopause women, they experience a feeling of intense heat with sweating and rapid heart beat and may typically last for twenty to thirty minutes. The sensation of heart being is present in the face and chest and it spread at the back of the neck and through out of the whole body. Severe hot flushes can make it difficult to get full night's sleep and can affect mood, impair concentration and other physical problems.

In the community the investigator found that most of the people were unaware of hotflushes symptom and to prevent the discomfort the community people used to take rest, sit under the fan, lie down and drink water. Most of the menopausal women were unaware of hormonal replacement therapy and those who know were not interested in treating it by spending money. Some menopausal women found it difficult to use pills. So the investigator wanted to bring awareness about hotflushes among menopausal women and use pills free treatment thereby using deep breathing exercise as risk free treatment that can

be used by every one in all the level of economical background. In this way the investigator wanted to asses the effectiveness of deep breathing technique among menopausal women.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of deep breathing exercise on hot flushes experience of menopausal women in a selected community area in Sulur at Coimbatore.

AIM OF THE STUDY

The aim of the study is to assess the effectiveness of deep breathing exercise on the physical symptoms of hotflushes and psychological feeling of menopausal women.

SPECIFIC OBJECTIVES

1. To assess and compare the degree of hotflushes in experimental and control group before and after intervention.
2. To assess and compare the frequency of symptoms of hotflushes in experimental and control group before and after intervention.
3. To assess and compare the psychological feeling of experimental and control group before and after intervention.
4. To assess and compare problem faced between experimental and control group after intervention.
5. To find the association between demographic variables and symptoms of hotflushes among menopausal women before intervention.

HYPOTHESIS

H_1 - There is significant difference in degree of hotflushes in experimental and control group after intervention.

H_2 - There is significant difference in the problem faced between experimental and control group after intervention.

H_3 - There is significant difference in the psychological feeling of experimental and control group before and after intervention.

OPERATIONAL DEFINITIONS

Hot flushes experience

It is the feeling of heat associated with physical symptom and psychological symptom which affect the activity of person and general wellbeing. It can be observed or self reported.

Deep breathing exercise

It is a breathing exercise in which a person inhale deep breath through the nose and exhale the breath slowly through the mouth.

Menopausal women

Menopause is a period in which menstruation stops and the lifecycle of the women changes from reproductive to non-reproductive stage.

ASSUMPTION

- Degree of hot flushes varies from individual to individual.
- Hot flushes may be influenced by various personal and cultural factors

DELIMITATIONS

The Study is delimited to postmenopausal women

- Age- above 45 years
- Non working
- Residing in a particular locality

LIMITATIONS

- As the sample size is small, generalization may not be possible.
- Data is based only on verbal report and not based on observation

SCOPE OF THE STUDY

As this study is to assess the effectiveness of deep breathing exercise to reduce hotflushes symptoms, experimental group were taught deep breathing exercise, the symptoms has been reduced from moderate to mild. It is very easy to practice the deep breathing exercise and can be practiced by the menopausal women of both high and low socioeconomic statuses. If the exercise has effect it can be practiced by all menopausal women.

CONCEPTUAL FRAMEWORK

A conceptual model can be defined as a set of concepts and those assumptions that integrated them in to a meaningful configuration (Fewett, 1980)

The development of a concept model is a fundamental process required before conducting actual research. The framework influences each state of research process. The conceptual framework in nursing research can help to provide a clear concise idea of knowledge in the area.

The conceptual framework used in this study is based on title et.al (2004) effectiveness model. Effectiveness indicated the effect of deep breathing exercise on hotflushes.

Effectiveness indicates the benefits of deep breathing exercise on patient with hotflush symptoms.

Independent variables are menopausal women characteristics such as age, occupation, educational status, monthly income etc

Intervening variables: Deep breathing exercise is demonstrated by investigator and assessed the effectiveness among menopausal women.

Based on modified Tilter et.al (2004) effectiveness model the investigator assessed the effectiveness of deep breathing exercise on hotflushes and evaluated the degree of symptom, psychological feeling and problem faced before and after intervention.

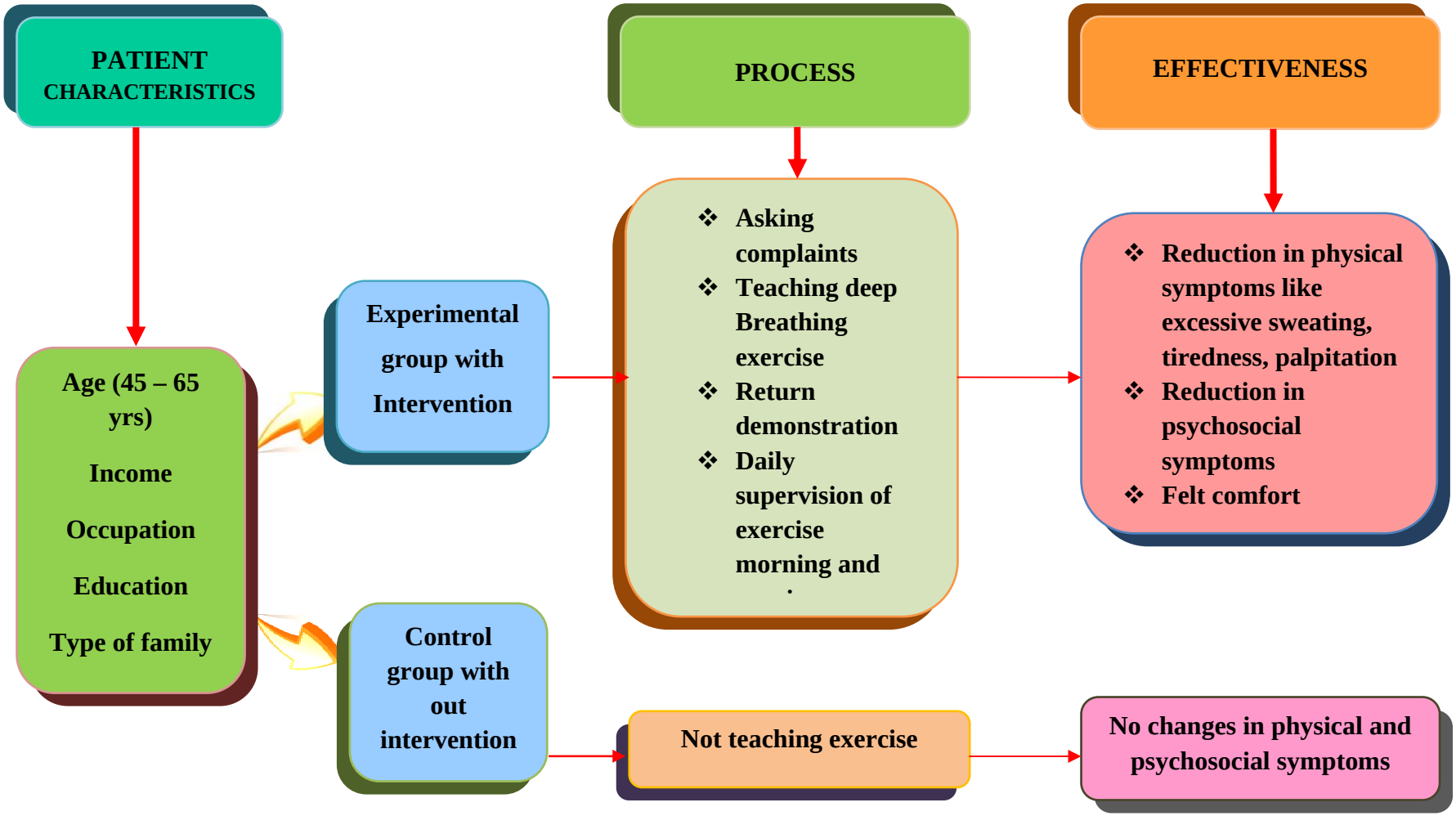

Figure - 1 Modified Titler effectiveness model (2004)

REVIEW OF LITERATURE

CHAPTER - II

REVIEW OF LITERATURE

Review of literature is a key step in research process. Review of literature refers to an extensive, exhaustive and systematic examination of publication relevant to the research project **(B.T. Basavathappa, 2001).** The term review of literature refers to the activities involved in identifying or searching for information on a topic and developing an understanding on the state of knowledge of the topic **(Polit FD.and Beck TC, 2008).**

Literature related to the topic is presented in this chapter as follows.

1. Literature about effect of deep breathing exercise on hotflushes
2. Literature about non-pharmacological management of hot flushes.
3. Literature about pharmacological management of hot flushes.

1. Effect of deep breathing exercise on hotflushes

Mouloud AD (2008) conducted a study to evaluate effect of yoga on menopause syndrome. A total of 47 postmenopausal women aging 45 - 63 years participated in a 12 weeks restorative yoga intervention. Menopausal symptoms were assessed before intervention, at 4^{th} week and 12^{th} week. After intervention symptoms were observed through 20 item checklist that embedded menopause symptom. Questions were scored on a scale of 0-3, 0 (none), 1(mild), 2(moderate) or 3 (severe). If the total score was 15 or above, women were selected for yoga practice which include breathing technique. Posture and relaxation process taught by certified yoga teacher and found significant improvement from pretest to post test and concluded that yoga is powerful technique to relieve hotflushes symptoms.

Chattha .R.et.al. (2008) conducted a randomized controlled study in 14 centers of yoga research in Bangalore to assess the effect of a regularly practiced yoga on peri-menopausal symptoms such as hotflushes, night sweats and sleep disturbance. They randomized 120 peri-menopausal women between

the ages of 40 and 55 years to experimental and control group. The women in the experimental group practiced yoga postures (asana), breathing exercise and cyclic meditation for one hour 5 days per week. The control group participated in supervised simple physical exercises for the same amount of time per week and she found that women in the experimental group experienced a greater reduction in hotflushes, night sweats and sleep disturbances than the control group.

Mary.R.Tylor.R.N.(2008) conducted a study to assess the participants perspectives on a yoga intervention for menopausal symptoms. A pilot study was conducted to assess the effect of yoga practice among 11 menopausal women for 10 week, after doing exercise women reported that they feel relaxed and physically better. Many viewed that yoga reduce stress and manage their menopausal symptoms.

Cathryn Booth et.al (2007) conducted a study to assess the feasibility and efficacy of a yoga treatment for menopausal symptoms. She selected 12 peri and post menopausal women experiencing menopausal hotflushes 4 times per day or 4 days per week. Pre and Post treatment was assessed by Wiklund Symptom Checklist which include frequency, duration, severity of hotflushes, interference of hotflushes with daily life and subjective sleep quality. Participants with hotflushes symptoms were asked to practice breathing exercise at home every day and found significant difference from pretreatment to post-treatment improvements were found in general wellbeing.

David S (2004) designed a study to determine the effect of regular physical exercise on the frequency of hot flushes. He investigated the frequency of moderate and severe hot flushes in 79 postmenopausal women of experimental group and compared with control group of 866 postmenopausal women between fifty two and fifty four years old to whom exercise were not taught.

The study clearly demonstrated that regular physical exercise decreased the frequency and severity of hot flushes. The women in the experimental

group passed through a natural menopause without the use of hormone replacement therapy, the physically active women who had no hot flushes spend an average of 3.5 hours per week exercising, while women who exercised less than this amount were more likely to have hot flushes.

Freedman R.R.(1992) attempted to develop an effective behavioral treatment for menopausal hotflushes and to determine the active behavioral components. Thirty three women with frequent menopausal hotflushes were randomly assigned to receive eight sessions of training in paced respiration and the hotflushes were objectively measured and found that the subjects undergoing paced respiration had significant reduction in hotflush frequency and respiratory rate. He concluded that paced respiration training may be, a useful treatment alternative for the reduction of hotflushes.

Hammer M, Berg G et. al (1990) investigated the frequency of moderate and severe hot flushes in a group of women (n=142) of experimental group who took part in organized physical exercise on a regular basis and investigated control group of women aged 52 and 54 years old in the city of Linkoping, in Sweden. Only women with natural menopause and without a history of hormonal replacement treatment were statistically compared in the study.

It appeared that moderate and severe symptoms with hot flushes and sweating were only half, was common among the physically active postmenopausal women (21.5%) as in the control group (43.8%). This research concludes that the exercise affect the mechanisms that elicit hot flushes in peri and postmenopausal women.

2. Non-Pharmacological management of hot flushes.

Cho.S.H.(2009) attempted critically to assess whether acupuncture therapy reduces vasomotor menopausal symptom and to evaluate the adverse effects of acupuncture therapy on the basis of the results of randomized controlled trials(RCTS).

Eleven studies, which included a total of 764 individual cases were systematically reviewed. Six trials compared acupuncture treatment to sham or placebo acupuncture. Only one study using a nonpenetrating placebo needle found a significant difference in the severity outcomes of hotflushes between groups. Five studies reported a reduced frequency of hotflushes within groups. An analysis of the outcomes of the trials that compared acupuncture with hormone therapy, for reducing vasomotor symptoms showed that acupuncture was superior.

Jue Z, Fan Q et. al. (2009), conducted a study to explore the effects of acupuncture and auricular acupressure in relieving menopausal hot flushes of bilaterally ovariectomized Chinese women. Women were randomized into an acupuncture and auricular acupressure group (n = 21) and a hormone replacement therapy (HRT) group (Tibolone, n = 25). Each patient was given a standard daily log and was asked to record the frequency and severity of hot flushes and side effects of the treatment felt daily. The serum levels of follicle stimulating hormone (FSH), LH and E_2 were detected before and after the treatment.

After the treatment and the follow-up, both the severity and frequency of hot flushes in the two groups were relieved significantly when compared with pre-treatment ($P < 0.05$). There was no significant difference in the severity of hot flushes between them after treatment ($P > 0.05$), while after the follow-up, the severity of hot flushes in the HRT group was alleviated more and the levels of FSH decreased significantly and the levels of E_2 increased significantly in both groups ($P < 0.05$), and they changed more in the HRT group ($P < 0.05$). The researcher concluded that acupuncture and auricular acupressure can be used as alternative treatments to relieve menopausal hot flushes, for those bilaterally ovariectomized women who are unable or unwilling to receive HRT.

Ruta N (2008) selected 102 postmenopausal women and recruited them for two studies in Sweden. In the first study, women were randomized to receive either transdermal estrogen or placebo. In the second study, women were

randomized to three groups and received oral estrogen, acupuncture or applied relaxation for 12 weeks. Menopausal symptoms were measured with daily logs.

The results stated that the number of hot flushes in a 24 hour period decreased significantly after 4th and 12th week in all treatment groups. The researcher concluded that, acupuncture decreased the number of hotflushes more than placebo.

Laurie. K.et.al. (2008) conducted a study to evaluate the direct and indirect relationship between stress, psychological distress, psychosocial factors, menopause symptom severity and physical health in middle aged women. One hundred and sixteen women aged 45-55 years were recruited through women's health centers and community organizations. They completed a short questionnaire asking about stress, psychological distress, menopause symptoms and physical health. This research concluded that women with high emotional intelligence appear to hold more positive attitudes to menopause and experience less severe stress, psychological distress and menopause symptoms and better physical health. These result suggested that women who expect menopause to be a negative experience, are highly stressed or distressed.

Julia G (2008) designed a study to assess the effectiveness of professional herbal practice in the treatment of menopausal symptoms. She conducted the study in a primary health care centre in UK. Participants were 45 women aged 46-59 experiencing self defined menopausal symptoms and no menstrual bleeding for 3 months. Exclusion criteria included use of hormone replacement therapy. Participants were block randomized into a treatment group (n=30) offered treatment from one of three herbal practitioners, and control group (n=30) offered treatment after waiting for 4 months. Change in menopausal symptoms was measured in both groups using the validated Greene Climacteric scale.

The treatment group demonstrated a statistically and clinically significant reduction in menopausal symptoms compared to control group.

Daley A et.al (2006) designed a study to determine the use of complimentary and alternative medicine including non-pharmacological intervention to alleviate menopausal symptoms. Participants aged 46-55 year completed a postal questionnaire that contained items relating to demographics, lifestyle factors, weight, height, exercise behavior, menopausal status, vasomotor symptoms, utilization and perceived effectiveness of a range of complementary and alternative medicine

Among 1206 women who responded 563(47%) were symptomatic. Non-pharmacological interventions for symptom management were diet or nutrition (44.3%), exercise (41.5%), relaxation or stress management (27.4 %) and homeopathic or naturopathic remedies (25.4%). The study concluded that many menopausal symptomatic women are using a wide range of non-pharmacological intervention and reports these to be effective, particularly those who are white, physically active and do not smoke.

Gary E, Joel M, Vered S, Hasan R (2006) conducted a single arm, pilot study and investigated the use of hypnosis to reduce hot flushes in 16 breast cancer survivors. Each patient received 4 weekly sessions of hypnosis and instructed self-hypnosis. Patients completed daily diaries of the frequency and severity of their hot flushes and also completed post treatment ratings of the degree to which hot flushes indicated a 59% decrease in total daily hot flushes and a 70% decrease in the degree to which hot flushes interfered with daily activities which include social activities, leisure activities, sleep, mood, concentration, relations with others, sexuality, enjoyment of life and overall quality of life.

This pilot study suggests that clinical hypnosis may be an effective non-hormonal and non-pharmacological treatment for hot flushes.

Irvin.J.H.et.al.(1996) designed a study to investigate the efficacy of elicitation of the relaxation response for the treatment of menopausal hotflushes and psychological symptoms. The volunteer sample consisted of 33 women between the ages of 44 and 66 years experiencing atleast five hotflushes per 24 hours and not using hormone replacement therapy. The setting was an

outpatient clinic in a tertiary care teaching hospital. The interventions used to measure both the frequency and intensity of hotflushes by Spielberger State-Trait Anxiety Inventory (STAI) and the Profile of Mood Scale (POMS). The first 3weeks of baseline measurement of frequency and intensity of hotflush symptoms and the pre intervention psychological scores were compared with the final 3 weeks measurement of frequency and intensity and the post intervention psychological scores for symptomatic improvement. The experimental group demonstrated significant reduction in hotflush intensity; there were no significant changes for the control group.

Myra SH (1995) conducted a study on the feasibility and effectiveness of offering an alternative psychological treatment for women reporting menopausal hot flushes. Women reporting hot flushes at least once a week, were interviewed and asked to choose between no treatment, HRT or psychological treatment, Cognitive Relaxation Therapy (CRT), which includes relaxation, stress reduction and information about coping with hot flushes.

The results stated that a large proportion of women choosed the psychological treatment, because they wanted help, but did not want to have HRT. Moreover, many of them wanted to learn skills to help them to control their symptoms themselves.

3. Pharmacological management of hot flushes.

Anna Ratka.et.al.(2009) designed a study to find the association of various dimensions of Hotflushes with systemic levels of gonadal steroids, the goal of this study were to compare concentration of gonadal hormones between menopausal women with hotflushes and those with no hotflushes and to characterize the association between steroid levels and multiple dimensions of hotflushes. Menopausal women with hotflushes and without hotflushes participated in 4 study sessions, one every 2 months. Concentration of gonadal hormones was measures at each bi-monthly sessions. Steroid levels were correlated to duration, frequency, length of each episode, timing and intensity of hotflushes. Data from 20 women with hotflushes and 15 women without

hotflushes with similar demographic profiles were analysed. The results from the present study showed that systemic levels of estrone and progesterone were significantly lower in women experiencing hotflushes than in asymptomatic women. There was single association between levels of estradiol, estrone, Progesterone and androstenedione but not testosterone with duration, frequency, timing and intensity of hotflushes.

Evans ML (2005) designed a study to examine the efficacy of extended release valafaxine for the treatment of postmenopausal hotflushes. Eighty postmenopausal women with more than 14 hot flushes per week were randomized to receive treatment with extended releases venlafaxine or placebo. Participants received 37.5mg daily for 1 week followed by 75 mg daily for 11 weeks and through questionnaires she assessed hot flush score, quality of life and sexual function. Participants were treated for 12 weeks. Of the 80 subjects who enrolled in the study, 40 were in the treatement group and 40 in the control group.

The result stated that subjective assessment at monthly visits of the effects of hotflush symptoms on daily living were significantly improved in the treatment group. The research concluded that extended release venlafaxine 75 mg per day, is an effective treatment for postmenopausal hot flushes.

Brigitte LS, Deborah K, Brocaw et. al (2004) conducted a study to review the literature on clonidine, benlafaxine, selective serotonin reuptake inhibitors and gabapentin for the treatment of hot flushes in women unable or unwilling to take hormonal therapies. Several non hormonal alternatives have been evaluated in small controlled and uncontrolled trials.

The results stated that oral and transdermal formulations of clonidine are moderately effective in reducing hot flushes. Venlafaxine, paroxitine and gabapentien suggests greater reductions in hotflush frequency and severity compared with those of cloridine. Flexetive appears to display modes of benefit, Compared trials have been conducted. Most women studied in these trials had a history of breast cancer and many were taking concurrent tamoxifn. A lot of these agents were fairly well tolerated.

Clonidine, Venlafaxine, paroxetine, fluoxetine and gabapentin are non-hormonal agents that have demonstrated efficacy in small controlled and uncontrolled trials in reducing hotflushes and should be considered in patients unwilling or unable to take hormonal therapies.

Barton DL, Loprinzi CL et. al (1998) developed and conducted a placebo controlled randomized crossover trial, after 1 week baseline period, patients received 4 weeks of an identical appearing placebo or vice versa. Diaries were used to measure potential toxicities of hot flushes during the baseline week and the two subsequent 4 weeks treatment periods.

The 120 patients evaluated for toxicity failed; 105 patients who finished the first treatment period showed a similar reduction in hot flush frequencies. A crossover analysis showed that Vit E. was associated with a minimal decrease in hotflushes.

CONCLUSION

The above mentioned studies have explored to reveal some effect on breathing technique on hotflushes. Through this findings the researcher conclude that breathing exercise reduce hotflushes symptoms and reduce the severity of hotflushes. It relieve the psychological feeling of menopausal women and after doing exercise the menopausal women faced less problem in doing household activity and participated in social activities without discomfort.

METHODOLOGY

CHAPTER-III

METHODOLOGY

This chapter deals with the description of the research methodology adopted by the investigator to assess the effect of deep breathing exercise to reduce hotflush experience of menopausal women. It includes research design, population, sample size, inclusion and exclusion criteria for sample selection, sampling technique, tool, data collection procedure and data analysis.

RESEARCH APPROACH

The present study aimed at evaluating the effect of deep breathing exercise on hotflushes experience among menopausal women in community area. Hence an evaluative and experimental approach was considered to be most appropriate to accomplish the objectives of the study.

RESEARCH DESIGN

A non equivalent control group pretest-post test quasi-experimental design was used,

Experimental group O_1xxxxxxxxxxxxxxx O_2 xxxxxxxxxxxxxxx O_3

Control group O_1----------O_2 ---------- O_3

O_1 – Assessing degree of hot flushes before intervention for experimental and control group

O_2- Assessing degree of hot flushes after 15 days of intervention for experimental and control group.

O_3 – Assessing degree of hot flushes after 30 days of intervention for experimental and control group.

X –Deep breathing exercise

For experimental group breathing exercise was taught and practiced the exercise daily morning and evening for 15 minutes for 30 days. Control group did not received the exercise.

VARIABLES OF THE STUDY

Independent variable	-	Deep breathing Exercise
Dependent variable	-	Hot flushes experience

SETTING OF THE STUDY

Setting of the study refers to, the area where the study is conducted. The study was conducted in a selected community area in Sulur at Coimbatore. The total population of this village is 2000 to 2500.Majority of the people belong to low socio economic status. Painting and coolie work are the main source of income for this people. This community has all the basic facilities like school, shops, temple and Kalyanamandabam. The village health nurse resides in the health centre of community. For medical help, the people in the community, approach government hospital in coimbatore city and health center in the community area. A balwadi is functioning in the community for the past 8-10 years. The investigator selected 30 menopausal women, from two areas of selected community area in Sulur at Coimbatore, among 30 menopausal women,15 menopausal women of one area are under experimental group and 15 menopausal women of other area are under control group.

POPULATION

The population of this study included all the postmenopausal women aged 45-65 years with menopausal symptoms and not taking any treatment measures.

SAMPLE SIZE

Sample refers to a subset of population that is selected to participate in a particular study (Burns Grove 2007).

This study included 30 postmenopausal women who fulfilled the inclusion criteria for sample selection.15 women selected from one area of the community was assigned to the experimental group and 15 women selected from another area of the community was assigned to the control group.

SAMPLING TECHNIQUE

The investigator adopted a convenient sampling technique. According to the availability, the samples were selected.

SAMPLING CRITERIA

Inclusion criteria:

- Post menopausal women aged 45-65 years
- Post menopausal women with complaints of hotflushes symptom.
- Post menopausal women willing to participate.

Exclusion criteria:

- Women who had undergone menopause due to Hysterectomy
- Other medical condition such as Diabetes mellitus, Hypertension and cardiac disease.

DESCRIPTION OF THE TOOL

The tools used for the study were a questionnaire, 2 rating scales and a lesson plan (appendix). The technique used for data collection was interview.

1. **Questionnaire**

The questionnaire was designed to gather demographic data such as age, education, age during menopause, type of family, occupation, income and habits.

2. **Rating scale-1**

The **rating scale** was developed to assess the symptoms of hotflushes before and after intervention. It consisted of 10 questions and 3 columns (very

frequent, frequent, and rare) to rate the response to know the degree of symptom before and after intervention.

3. Rating scale –II

The rating scale was developed to assess the psychosocial feeling of menopausal women before and after intervention. It consist of 6 questions and 3 columns (most of the time, some time and rare) to rate the responses. (Appendix)

The tool was developed based on the objectives of the study, review of literature and discussion with experts.

SCORING AND SCORING INTERPRETATION

S.No	Area	Score	Score Interpretation
1.	Symptoms of Hotflushes	3	Very frequent
		2	Frequent
		1	Rare
2.	Psychological Feeling	3	Most of the times
		2	Some times
		1	Rare

STRUCTURED TEACHING PLAN

A Teaching plan on deep breathing exercise was prepared to help menopausal women to learn exercise.

The following steps were adopted to develop the teaching plan

- Development of objectives based on the study objectives
- Selection of teaching learning contents
- Selection of audio visual aids
- Organization of the content

The contents included were

- Symptoms of hotflushes
- Benefits of exercise
- Steps of deep breathing exercise
- Things to remember
- Instructions to follow

Deep breathing Exercise –Steps

- Sit in a comfortable position
- Breath in slowly through the nose
- Count up to five in mind
- Breath slowly out through mouth
- Count from five to one in mind
- Ask the client to do it for 15mts
- Supervise the client daily morning and evening for 1month.

The teaching plan was developed in English and it was translated in to Tamil

CONTENT VALIDITY

The tool along with the teaching plan and objectives were submitted to three nurses and one medical expert. The medical expert was DGO from RVS Hospital of more than 10 years experience, one nurse expert was the principal M.sc (N) more than 20 years experience of RVS college of nursing Sulur and the other nurse expert is the principal M.sc (N) more than 10 years experience of RVS college of nursing Kannampalayam and the other one is the nursing

superintendent M.sc (N) with 20 years experience of Ramakrishna Hospital, Coimbatore. They accepted the tool and there was no modification.

RELIABILITY

The reliability of the tool was obtained by Test-Retest method. The retest was given 15 days after the first test. Karl Pearson's co-efficient of correlation test showed that the obtained 'r' value was 0.97 which showed a high positive correlation and the stability of the tool was assured.

PILOT STUDY

In order to test the practicability and feasibility of the tool, a pilot study was conducted at another community for 15 days. Before starting the pilot study permission was obtained from the President of the village. 6 samples were selected with complaints of hotflushes symptoms. 3 samples in experimental group, 3 samples in control group. Experimental and control group were selected from two different areas of the community.

After a self-introduction, the investigator explained the nature of the study to the samples. After developing good rapport the investigator collected the data on symptoms of hotflushes by interviewing the sample individually through questionnaire. Deep breathing exercise was taught and demonstrated to the 3 samples of experimental group individually and they were asked to redemonstrate. The exercise continued for 15 days in the presence of investigator for 15 minutes daily morning and evening. On 15^{th} day the investigator conducted the post test by using the same questionnaire. The period of pilot study was 15 days.

DATA COLLECTION PROCEDURE

The main study was conducted in selected community area in Sulur at Coimbatore. Permission was obtained from the Panchayat president and

selected two areas of selected community. 15 members in each area as experimental and control group. The investigator selected the sample according to the complaints and inclusion criteria. Data has been collected by interviewing the sample individually through questionnaire. The investigator taught deep breathing exercise to experimental group and the control groups were not taught exercise. The investigator visited the menopausal women, of experimental group one by one, daily morning and evening and insisted them to do the exercise. The duration for doing exercise was 15 minutes in the morning and evening. On 15^{th} day and 30^{th} day the investigator gave same questionnaire for the menopausal women and observed the changes. Total data collection period was 30 days.

PLAN FOR DATA ANALYSIS

The data analysis was done by using descriptive statistics and inferential statistics. The plan for data analysis are as follows

Descriptive Statistics

Frequency and percentage distribution were used to analyse demographic variables. Mean and standard deviation were used to assess the significant difference of symptoms and psychological feeling of experimental and control group before and after intervention.

Inferential Statistics

't'-test was used to find the significant difference in symptom, psychological feeling and problem faced by menopausal women before and after intervention.

Chi – square test was used to check association between demographic variables and symptoms of hotflushes.

ANALYSIS AND INTERPRETATION

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF DATA

James.A.Fain (2003) defines data analysis as the "systematic organization and synthesis of research data and the testing of research hypothesis using those data". Interpretation is the process of making sense of the results of a study and examining their implications.

This chapter deals with the analysis and interpretation of data collected from 30 menopausal women. The data have been analyzed and presented under the following headings.

1.Demographic Characteristics of the experimental and control group

2. Degree of hotflushes in experimental and control group

Symptoms have been analyzed in three degrees (mild,moderate and severe) for the experimental and control group before and after intervention in frequency and percentage and comparison of degree of hotflush in experimental and control group has been done by mean score and its significance by statistical test.

3.Psychological feeling in experimental and control group

Psychological feeling has been analyzed in three categories such as most of the times, sometimes and rare for experimental and control group before and after intervention. Frequency and percentage has been done. Mean score and its significance have been seen by statistical test.

4. Problem faced by experimental and control group

Problem faced has been analyzed using mean score and its significance by statistical test**.**

5. Association of study variables and demographic variables

This analysis has been done to find association between demographic variables and symptoms of hotflushes in experimental and control group.

1.Demographic characteristics of the sample

TABLE – I

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXPERIMENTAL AND CONTROL GROUP ACCORDING TO DEMOGRAPHIC VARIABLES

N = 30

Sl. No.	Demographic variables	Experimental group N = 15		Control group N = 15	
		Fre	%	Fre	%
1	Age in years				
	a. 45-50 years	2	13.33	7	46.66
	b. 51-55 years	--	--	1	6.66
	c. 56-60 years	--	--	3	20.00
	d. 61-65 years	13	86.66	4	26.66
2	Educational status				
	a. Middle school	1	6.66	2	13.33
	b. Primary school	0	0	2	13.33
	c. Illiterate	14	93.33	11	73.33
3	Type of family				
	a. Nuclear family	8	53.33	8	53.33
	b. Joint family	7	46.66	7	46.66
4	Occupation				
	a. Housewife	3	20.0	11	73.33
	b. Daily Wage labour	12	80.0	2	13.33
	c. Business	--	--	2	13.33
5	Income				
	a. Below Rs.3000	13	86.66	14	93.33
	b. Rs.3001-5000	2	13.33	1	6.66
6	Age of attaining menopause				
	a. 45-50 years	3	20.0	7	46.66
	b. 51-55 years	12	80.0	8	53.33

Table- I presents the demographic characteristics of the sample

Age: Majority of the menopausal women 13(86.66%) in the experimental group were in the age group of 61-65 years and only 2 mothers (13.33%) were in the age group of 45-50 years.In the control group 7(46.66%) women were in the age group of 45-50 years , 3-4 women (20-26%) were aged 56-65 years. Only one menopausal women (6.66%) was in the age group of 51-55 years.

Education status: The level of education of menopausal women ranged from illiterate to middle school. Majority of the experimental group mothers 14(93.33%) were illiterate and only 1(6.66%) woman studied up to middle school. In control group majority of the menopausal women 73.33% were illiterate and 2 women (13.33%) had either primary or middle school education.

Type of family: Number of women in nuclear family 8(53.33%) and joint family 7(46.66%) were the same in experimental and control group.

Occupation: Majority of the menopausal women (80%) in experimental group were daily wage labourers and 3(20%) women were housewives. In control group most of the women 11(73.33%) were housewives and 2 women (13.33%) were either daily wage labourers or doing business.

Income: Majority of the menopausal women in experimental group 13(86.66%) and in control group 14(93.3%) had an income of below Rs.3000/- per month.

Age of attaining menopause: Majority of menopausal women 12(80%) attained menopause at the age of 51-55 years and 3(20%) at 45-50 years. In control group 7(46.66%) attained at the age of 45-50 years and 8(53.33%) at the age of 51-55 years.

TABLE-II

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXPERIMENTAL GROUP IN THREE DEGREES OF HOTFLUSHES BEFORE AND AFTER INTERVENTION

N=15

S.no	Degree of symptoms	Before intervention		After intervention			
				On 15th day		On 30th day	
		Freq	%	Freq	%	Freq	%
1	Mild (0-10)	8	53.33	12	80.0	15	100.0
2	Moderate (10-20)	7	46.33	3	20.0	0	--
3	Severe (20-30)	0	--	0	--	0	--

Table-II presents the distribution of experimental group in three degree of hotflushes before and after intervention

Before intervention in experimental group, 8 women (53.33%) had mild symptoms and 7 women (46.33%) had moderate symptoms. After intervention on 15th day only 3 women (20%) had moderate symptom and 12 women (80%) with mild symptom. On 30th day all the menopausal women (100%) had mild symptoms.

This table concludes that deep breathing exercise has reduced the degree of hotflushes from moderate to mild symptoms.

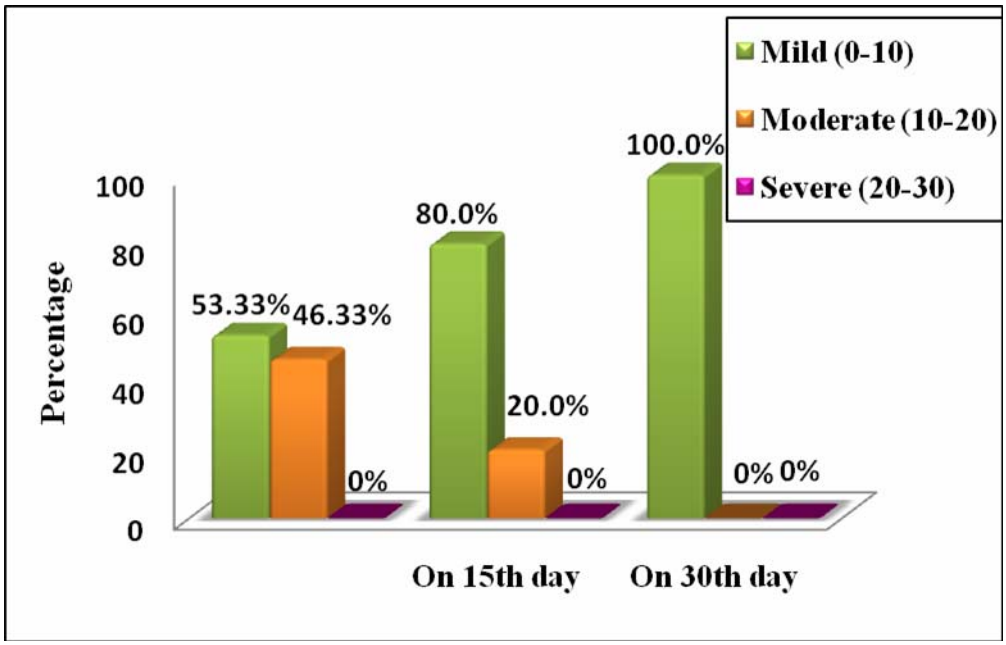

Figure – 2 Percentage of experimental group according to degree of symptom before and after intervention.

TABLE-III

FREQUENCY AND PERCENTAGE DISTRIBUTION OF CONTROL GROUP IN THREE DEGREES OF HOTFLUSHES BEFORE INTERVENTION AND IN SUBSEQUENT OBSERVATION

N=15

Sl. No.	Degree of symptoms	On 1st day		Subsequent observation			
				On 15th day		On 30th day	
		Fre	%	Fre	%	Fre	%
1	Mild (0-10)	1	6.66	1	6.66	1	6.66
2	Moderate (10-20)	14	93.33	14	93.33	14	93.33
3	Severe (20-30)	--	--	--	--	--	--

Table-III presents the distribution of control group in three degree of hotflushes

In control group, the first observation shows that most of the menopausal women (93.33%) had moderate symptom and only one (6.66%) had mild symptom. The observation of control group without intervention on the 15th and 30th day shows the same number of menopausal women with same degree of hotflushes.

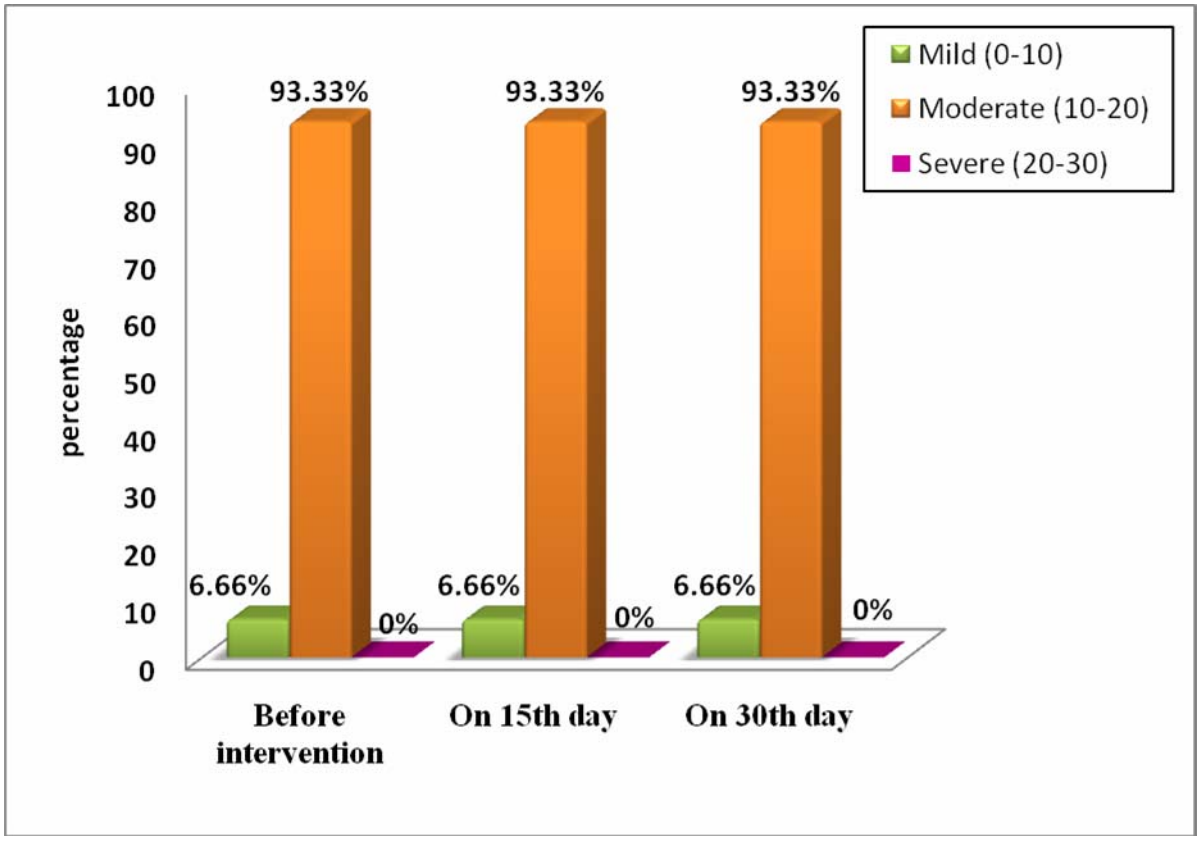

Figure – 3 Percentage of Control group according to degree of symptom before and in subsequent observation.

TABLE-IV

MEAN SCORE OF HOTFLUSHES SYMPTOMS OF EXPERIMENTAL GROUP AND CONTROL GROUP BEFORE AND AFTER INTERVENTION ON 30TH DAY AND STATISTICAL SIGNIFICANCE

N = 15

S.No.	Intervention	Mean	Mean difference	SD	Paired 't' value P < 0.05 df -28
Control Group	On 1st day	13.86	--	--	-NS
	On 30th day	13.86			
Experi-mental group	Before intervention	10.4	6	2.25	10.34*
	Intervention on 30th day	4.4			

Table value-2.15

NS-Non significance *-Significance df – degree of freedom

Table-IV presents the mean score on symptom of experimental and control group before and after intervention

The mean score of symptom is same for the control group on 1st and subsequent observation. The mean score of experimental group before intervention is higher than the mean score of symptom of experimental group on 30th day. Here the difference observed in mean score after intervention.

TABLE-V

MEAN SCORE OF HOT FLUSHES SYMPTOMS IN EXPERIMENTAL AND CONTROL GROUPS BEFORE AND AFTER INTERVENTION ON 30TH DAY AND LEVEL OF SIGNIFICANCE

N = 30

S.no	Intervention	Mean score	S.D	Mean difference	Unpaired 't' value,P<0.05 df-28
Before intervention	Experimental	10.4	3.28	3.46	5.01*
	Control	13.86	2.48		
Intervention on 30th day	Experimental	4.4	1.2	9.46	20.56*
	Control	13.86	2.48		

***-Significant df-degree of freedom Table value-2.05**

Table-V presents the mean score of symptoms of hotflushes in experimental and control group

The above data suggest that mean score of control group is greater than the mean score of experimental group. Here table value is 2.05 and calculated value is 20.56, So the hypothesis H1 "There is significant difference between experimental and control group after intervention" is accepted.

TABLE-VI

FREQUENCY AND PERCENTAGE DISTRIBUTION OF HOT FLUSHES SYMPTOMS OF EXPERIMENTAL AND CONTROL GROUP BEFORE INTERVENTION

N = 30

S.No	Symptoms	Experimental				Control			
		Present		Absent		Present		Absent	
		F	%	F	%	F	%	F	%
1	Disturbed sleep due to feeling of intense heat	4	26.66	11	73.33	12	80.0	3	20.0
2	Headache	12	80.0	3	20.0	14	93.33	1	6.66
3	Itching	0	--	15	100.0	1	6.66	14	93.33
4	Nausea	1	6.66	14	93.33	0	--	15	100.0
5	Excessive tiredness	15	100.0	0	--	14	93.33	1	6.66
6	Excessive thirst	2	13.33	13	86.66	2	13.33	13	86.66
7	Feeling of increase body temperature	7	46.66	8	53.33	14	93.33	1	6.66
8	Feeling of own heart beat	11	73.33	4	26.66	12	80.0	3	20.0
9	Feeling of excessive sweating	14	93.33	1	6.66	15	100.0	0	--

Table-VI presents the frequency and percentage distribution of hotflushes symptoms in experimental and control group.

In experimental group 15 (100%) menopausal women had excessive tiredness, 14 (93.33%) had excessive sweating , 12(80%) had headache and 11 (73.33%) had the feeling of own heart beat.

The remaining 7 (46.66%) members had the feeling of increase body temperature, 4 (26.66%) had disturbed sleep due to heat and 1(6.66%) had nausea and no one had the complaint of itching.

In control group 100% of menopausal women had the feeling of excessive sweating. And equal number of women 14 (93.33%) had the complaint of headache, tiredness and feeling of increase body temperature. Twelve (80%) menopausal women had disturbed sleep due to feeling of intense heat and feeling of own heart beat.

The remaining 2 (13.33%) had excessive thirst, 1 (6.66%) had itching and no one had the complaint of nausea.

Thus due to intervention the symptom has been reduced in experimental group and in control group the symptoms remain same.

TABLE-VII

MEAN SCORE PERCENTAGE OF HOT FLUSHES SYMPTOMS OF EXPERIMENTAL AND CONTROL GROUPS BEFORE INTERVENTION AND AFTER INTERVENTION

N = 30

S.No	Symptoms	Before intervention				After intervention			
		Experimental Group		Control Group		Experimental Group		Control Group	
		MS	MS%	MS	MS%	MS	MS%	MS	MS%
1	Disturbed sleep due to feeling of intense heat	0.53	17.78	1.73	57.77	0.26	8.89	1.73	57.77
2	Headache	1.66	57.8	2.2	73.33	0.8	26.67	2.2	73.33
3	Itching	0	0	0.13	4.44	0	0	0.13	4.44
4	Nausea	0.13	4.44	0	0	0.06	2.22	0	0
5	Excessive tiredness	2.66	88.89	2.6	86.66	1	33.33	2.6	86.66
6	Excessive thirst	0.4	13.33	0.33	11.11	0.13	4.44	0.33	11.11
7	Feeling of increase body temperature	1.06	35.55	1.93	64.44	0.46	15.56	1.93	64.44
8	Feeling of own heart beat	1.86	62.22	2.26	75.55	0.73	24.44	2.26	75.55
9	Feeling of excessive sweating	2	66.67	2.67	88.89	0.93	31.11	2.67	88.89

Table-VII presents the mean score percentage of experimental and control group before and after intervention.

In the experimental group, the highest mean score of 88.89% was in the symptom of "excessive tiredness". Secondly feeling of excessive sweating with a mean score of 66.67% and feeling of own heart beat with a mean score of 66.22%. In all the other symptoms the mean score ranged from 4.4% to 55.5%, the lowest is the symptom of nausea.

After the intervention the mean score for all the symptom reduced in the experimental group, a reduction of 2.22% to 33.3%. The highest reduction was seen in the symptom of excessive tiredness 33.33%.

In control group a similar pattern of mean score was seen in some symptom before intervention except number 1,2,7,8 and 9 in which the mean score was higher than the experimental group. After intervention the mean score of all the symptom remain the same in control group.

TABLE-VIII

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EXPERIMENTAL AND CONTROL GROUP ACCORDING TO PROBLEM FACED BEFORE AND AFTER INTERVENTION

N = 30

Problem faced	Before intervention								After intervention							
	Experimental group				Control group				Experimental group				Control group			
	Yes		No		Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
a. Difficult to do household activities	15	100	-	-	14	93.33	1	6.66	2	13.33	13	86.66	14	93.33	1	6.66
b. Not able to concentrate to work	15	100	-	-	13	86.66	2	13.33	2	13.33	13	86.66	13	86.66	2	13.33
c. Absenteeism for work due to discomfort	11	73.33	4	26.66	3	20.0	12	80.0	7	46.66	8	53.33	3	20.0	12	80.0
d. Unable to involve in social activity	5	33.33	10	66.66	3	20.0	12	80.0	3	20.0	12	80.0	3	20.0	12	80.0

Table-VIII presents the frequency and percentage distribution of experimental and control group according to problem faced before and after intervention.

Majority of menopausal women in experimental group 15(100%) members had the difficulty of doing household activities and not able to concentrate to work, after intervention it reduced to 2(13.33%). Eleven menopausal women(73.33%) become absenteeism for work due to discomfort and after intervention it reduced to 7(46.66%). Five menopausal women (33.33%) unable to involve in social activity and after intervention it reduced to 3(20%).

In control group there is no change before and after intervention.

TABLE-IX

MEAN SCORE OF PROBLEM FACED BY EXPERIMENTAL AND CONTROL GROUP BEFORE AND AFTER INTERVENTION AND LEVEL OF SIGNIFICANCE

N = 30

Intervention	Experimental group N=15		Control group N=15		Mean difference	Unpaired 't' value P<0.05 df-28
	Mean score	SD	Mean score	SD		
Before	4	0	4	0	0	--
After	2	0.63	4	0	2	20.8*

***-Significance df-degree of freedom Table value-2.05**

Table XI presents the problem faced by experimental and control group before and after intervention.

Experimental and control group are the same before intervention (mean score 4.0), After intervention mean score of control group is higher than the mean score of experimental group. Statistically there is significant difference between the mean score of experimental and control group (t-20.8 at df-28 ,p-0.01). The hypothesis H2,"There is significant difference in the problem faced between experimental and control group after intervention" is accepted.

TABLE-X

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SAMPLE BASED ON PSYCHOLOGICAL FEELING DUE TO HOTFLUSHES IN EXPERIMENTAL AND CONTROL GROUP

N = 30

S.No.	Psychological Feeling	Experimental group				Control group			
		Yes		No		Yes		No	
		Freq	%	Freq	%	Freq	%	Freq	%
1	Feel embarrassed	13	86.6	2	13.3	15	100	--	--
2	Feel very anxious	12	80	3	20	15	100	--	--
3	Fee very uncomfortable	14	93.3	1	6.6	15	100	--	--
4	Get easily annoyed	13	86.6	2	13.3	5	33.3	10	66.6
5	Get angry with others	--	--	15	100	1	6.6	14	93.3
6	No desire to be with others	3	20	12	80	5	33.3	10	66.6

Table-X presents the frequency and percentage distribution of samples based on psychological feelings due to hotflushes.

In experimental group majority of the menopausal women 14(93.33%) felt very uncomfortable, 12-13 women (80-86.6%) felt embarrassed, anxious and repeatedly they easily got anger, 3 women (20%) expressed no desire to be with others. Only 6.6% to 20% women did not repeat these symptoms except 'No desire to be with others' which was result by 80% of the women.

In control group, 15 (100%) of menopausal women felt embarrassed, very anxious, very uncomfortable, 5 (33.3%) get easily annoyed and no desire to be with others and only 1(6.66%) get angry with others.

TABLE-XI

MEAN SCORE OF PSYCHOLOGICAL FEELING DUE TO HOTFLUSHES IN EXPERIMENTAL AND CONTROL GROUP BEFORE AND AFTER INTERVENTION

N = 30

Intervention	Experimental group N=15		Control group N=15		Mean difference	Unpaired 't' value P<0.05 df-28
	Mean	SD	Mean	SD		
Before	6.06	3.01	7.66	1.64	1.6	1.5
After	2.9	1.20	7.66	1.64	4.76	17*

*** - Significance df – degree of freedom Table value - 2.05**

Table XI presents the mean score of psychological feeling of experimental and control group before and after intervention.

The data suggest that the mean score of control group is slightly higher before intervention than the mean score of experimental group. Statistically there is significant difference in psychological feeling of experimental and control group after intervention ($t = 17$ at $df – 28$, $P < 0.05$).

So the hypothesis H3, "There is significant difference in extent of feeling of experimental and control group after intervention" is accepted.

TABLE-XII

FREQUENCY AND PERCENTAGE OF EXPERIMENTAL AND CONTROL GROUP IN 3 CATEGORIES OF RESPONSE ON PSYCHOLOGICAL FEELING

N = 30

S.No	Psychological feeling	Experimental Group						Control Group					
		Most of the times		Some times		Rare		Most of the times		Some times		Rare	
		F	%	F	%	F	%	F	%	F	%	F	%
1.	Feel embarrassed	1	6.6	11	73.3	1	6.6	5	33.3	10	66.6	-	-
2.	Feel very anxious	2	13.3	8	53.3	2	13.3	3	20	12	80	-	-
3.	Feel very Uncomfortable	4	26.6	9	60	1	6.6	1	6.6	13	86.6	1	6.6
4.	Get easily annoyed	-	-	2	13.33	-	-	-	-	1	6.6	4	26.6
5.	Get angry with others	-	-	-	-	-	-	-	-	1	6.6	-	-
6.	No desire To be with others	1	6.6	1	6.6	1	6.6	-	-	4	26.6	1	6.6

Table XII presents the frequency and percentage distribution of experimental and control group in 3 categories of response on psychological feelings

In experimental group 4 (26.6%) menopausal women felt very uncomfortable, 2 (13.33%) felt very anxious, 1 (6.66%) felt embarrassed and no desire to be with others most of the time, 11 (73.3%) felt embarrassed, 9 (60%) felt very uncomfortable, 8 (53.3%) felt very anxious, 2 (13.3%) get easily annoyed, 1 (6.66%) has no desire to be with others sometime.

1 sample (6.66%) felt embarrassed, very uncomfortable and no desire to be with others, 2 (13.3%) felt very anxious rarely.

In control group 5 (33.3%) felt embarrassed, 3 (20%) felt very anxious and 1 felt very uncomfortable most of the time due to hotflushes. And 10 (66.6%) felt embarrassed, 12 (80%) felt very anxious, 13 (86.6%) felt very uncomfortable, 4 (26.6%) has no desire to be with others, 1 (6.66%) get easily annoyed and get angry with others sometimes due to hotflushes.

1 sample (6.66%) felt very uncomfortable and no desire to be with others, 4 (26.6%) get easily annoyed rarely due to hotflushes.

TABLE XIII

ASS0CIATION AND FREQUENCY DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF EXPERIMENTAL IN DEGREE OF SYMPTOMS AND ITS SIGNIFICANCE

N = 15

S.No	Demographic variables	Degree of symptoms				X^2 p < 0.05 df - 1
		Mild		Moderate		
		Freq	%	freq	%	
1	Type of family a. Nuclear family b. Joint family	4 4	26.6 26.6	3 4	20 26.6	2.16
2	Occupation a. Housewife b. Daily wage labour	7 1	46.6 6.6	5 2	33.3 13.3	4.7
3	Age of attaining menopause a. 45 -50 years b. 50 -55 years	2 5	13.3 33.3	1 7	6.6 46.6	4.7

Table value – 3.84

S - significance NS-Non-significance df- degree of freedom

Table XIII present the association between the demographic variables and degree of symptom in experimental group.

The table shows that there is an association between occupation and degree of symptom after intervention. Majority of menopausal women 7 (46.6%) those who are housewife had mild symptom than daily wage workers 1 (6.6%) and there is also association between degree of symptom and age of attaining menopause, here majority of menopausal women 7 (46.6%) aged between 50-55 years had moderate symptom than menopausal women aged between 45-50 years.

Type of family shows non-significance in relation to degree of symptom.

TABLE – XIV

ASSOCIATION AND FREQUENCY DISTRIBUTION OF DEMOGRAPHIC VARIABLES OF CONTROL GROUP IN DEGREE OF SYMPTOMS AND ITS SIGNIFICANCE.

N = 15

S.No	Demographic variables	Degree of symptom				X^2 P – 0.05 P<0.05 df – 1
		Mild		Moderate		
		Freq	%	freq	%	
1.	Type of family a. Nuclear family b. Joint family	1 0	6.66 0	7 7	46.6 46.6	3.13
2.	Occupation a. Housewife b. Daily wage labour	1 0	6.66 0	10 2	76.9 15.3	1.41
3.	Age of attaining menopause a. 45 -50 years b. 50 -55 years	0 1	0 6.66	7 7	46.6 46.6	2.93

NS-Non significance **df –degree of freedom** **Table value – 3.84**

Table XIV presents the association between the demographic variables and degree of symptom. In control group type of family, occupation and age of attaining menopause shows non-significance in relation to the degree of symptoms.

DISCUSSION

CHAPTER – V

DISCUSSION

This study focuses on assessing the effect of deep breathing exercise to reduce hot flushes symptoms and to observe how much it promote comfort to the menopausal women physically and psychologically. This chapter presents the findings and discussion.

1. Degree of hot flushes in experimental and control group

Table- II presents the distribution of experimental group in three degrees of hot flushes before and after intervention. Before the intervention in experimental group 8 women (53.3%) had mild symptom and 7 women (46.3%) had moderate symptoms. On 15th day only 3 women (80%) with mild symptom. On 30th day all the menopausal women 100% had only mild symptoms.

So the present study is supported by a study done by **Freedman (1992)** to develop an effective behavioral treatment for menopausal hot flushes and it resulted that after doing exercise there is reduction in hotflushes symptom.

Table –III presents the distribution of control group in three degrees of hot flushes before and after intervention. In control group, the first observation done before intervention, 93.33% had moderate symptom and only 1 woman (6.66%) had mild symptoms. The observation of control group without intervention on the 15th and 30th day showed the same numbers of menopausal women with the same degree of hotflushes.

Table -IV presents the mean score on symptom of experimental and control group before and after intervention. Here the data suggest that mean score of experimental group before intervention is higher (10.4) than the mean score of symptom after intervention on 30th day (4.4). So there was difference in the meanscore after intervention. But in control group meanscore is same before and subsequent observation.

Table -V presents the mean score of the symptoms of hotflushes among the experimental and the control group before and after intervention. The data suggest that the mean score of control group is higher than the mean score of

experimental group. The table value is 2.05 and calculated value is 20.56, so there is significant difference between experimental and the control group after intervention. So the H1 is accepted.

Table -VI presents the frequency and percentage distribution of experimental and control group with the symptoms of hotflushes. This table suggests that 100% of menopausal women in experimental group, has excessive tiredness and in control group. 100% of women had excessive sweating, remaining symptoms in experimental and control group ranged from 1 (6.66%) – 14 (93.3%).

Table-VII In this table experimental group has highest mean score of 88.89% in the symptom excessive tiredness, secondly feeling of excessive sweating with a mean score of 66.67% and feeling of own heart beat with a mean score of 62.22%, for all other symptoms the mean socre ranged from 4.4% to 55.5%, with the lowest mean score for nausea. After intervention the mean score for all the symptoms reduced in the experimental group. In control group similar pattern of mean score was seen before and after intervention. Here the present study is supported by **David. S.(2004)** in his study to determine the effect of regular physical exercise on frequency of hotflushes and it resulted that physical exercise decreases the frequency and the severity of hotflushes.

2. Problem faced by experimental and control group.

Table -VIII presents the frequency and percentage distribution of experimental and control group according to the problem faced before and after intervention. The experimental group had difficulties in doing household activities(100%) and unable to concentrate in work (100%) before intervention and after intervention it has been reduced to 2 (13.33%) for both the activities. In control group there was no change before and after intervention.

The present study is supported by **Marry. R. Taylor (2008)** in her study to assess the participants perception on yoga intervention for menopausal symptoms and it resulted that women were feeling relaxed and physically better after yoga.

Table –IX presents the men score of problem faced by experimental and control group before and after intervention. Here the data suggest that the mean score of problem in the experimental and control group are the same before

intervention (mean score 4) after intervention mean score of control group is higher than the mean score of experimental group. So according to hypothesis H2, there is significant difference in the problem faced between the experimental and the control group after intervention.

3. Psychological feeling in experimental and control group

Table -X presents the frequency and percentage distribution of samples based on psychological feelings due to hot flushes. In experimental group majority of the menopausal women 14 (93.3%) felt very uncomfortable, 12 women 80%, 2 felt embarrassed 13.3%, 3 felt anxious (20%) and 2 got annoyed (13.3%) easily. 3 women (20%) experienced no desire to be with others. In control group 100% of women felt embarrassed, very anxious and very uncomfortable. Five women (33.3%) got easily annoyed and no desire to be with others. One woman (6.6%) got angry with others.

Here the present study is supported by **Mary. R. Taylor(2008)** to asses the participants perspectives on Yoga intervention for menopausal symptoms and it resulted that women felt relaxed and physically better after yoga. It reduced stress and manage menopausal symptoms.

Table -XI presents mean score of psychological feeling of experimental and control group before and after intervention due to hotflushes. Mean score was higher for control group than experimental group. Statistically there is significant difference in psychological feeling of experimental and control group after intervention ($t = 17$ at $df – 28$, $P< 0.05$). So the hypothesis H3 is accepted.

Table-XII presents the frequency and percentage distribution of experimental and control group in 3 categories of response. Here feeling of women during hot fluses such as feel embarrassed, feel very anxious, feel very uncomfortable, get easily annoyed, get angry with others, no desire to be with others are categorized under most of times, some times and rare.

In experimental group majority of women 11 (73.3%) felt embarrassed some times and in control group majority of menopausal women 13 (86.6)- 12 (80%) felt very uncomfortable and anxious sometimes. This table suggested the psychological feeling of menopausal women before intervention.

4. Association of study variables and demographic variables.

Table –XIII presents the association between the demographic variables and degree of symptom. In this table occupation, age of attaining menopause shows significance in relation to the degree of symptoms and type of family shows no significant association to the degree of symptoms.

Table –XIV shows the association between the demographic variables and degree of symptom. In control group type of family, occupation and age of attaining menopause shows no significant association to the degree of symptoms.

The findings of the present study suggest than deep breathing exercise will reduce hot flushes symptoms.

SUMMARY, FINDINGS, CONCLUSION, IMPLICATION AND RECOMMENDATIONS

CHAPTER- VI

SUMMARY, FINDINGS, CONCLUSION, IMPLICATION AND RECOMMENDATION

This chapter presents the summary of the study, summary of the findings, conclusion, implication and recommendation.

SUMMARY OF THE STUDY

The main aim of the study was to explore the possible effect of deep breathing exercise on hot flushes experience

The conceptual framework of the study was based on the modified Tilter et al effectiveness model. The research design used in this study was quasi-experimental pre and post intervention two group design. The independent variable of the study was deep breathing exercise. Hotflushes experience of the menopausal women were dependent variables.

The study was conducted in selected community area in Sulur at Coimbatore. The data was collected for 30 days. Convenient sampling technique was adopted for the selection of the sample. The total sample of the study consisted of 30 menopausal women with hot flushes experience. The data was collected using rating scale and questionnaire. The reliability of the tool was established by test- retest method. The data was analyzed using descriptive and inferential statistics.

SUMMAY AND FINDINGS

Demographic data

Presents the demographic characteristics of experimental and control group. In experimental group 13 (86.6%) of 60-65 years. 14 (93.33%) members were illiterate. 12 (80%) members are daily wage labour and attained menopause at the age of 50 – 55 years.

In control group 14 (93.33%) were getting below Rs 3000 as their monthly income. 11 (73.3%) members were housewife and illiterate.

Symptoms in the experimental and control group

In experimental group due to deep breathing exercise, the symptoms has been reduced from moderate to mild;

In experimental group before intervention the 7 (46.3%) menopausal women had moderate symptom and after intervention 5 menopausal women 100% had mild symptoms.

In control group the degree of symptom remain same before and after intervention.

Psychological feeling of menopausal women

Psychological feeling menopausal women were categorized under most of the times, sometimes and rare. Rating scale was maintined under 3 point scale and the menopausal women in experimental group has been relieved form psychological feeling after intervention. In control group the psychological feeling remain same in experimental and control group.

Problem faced by menopausal women in experimental group and control group

The menopausal women faced problem such as difficult to do household activities unable to concentrate on work, discomfort unable to involve in social activity before intervention and after intervention they felt some comfort in doing the physical activities and there is no change in the control group before and after intervention.

Significant findings

There is significant difference between experimental and control group after intervention, t = 20.56 after intervention as the obtained value were greater than table value (2.05) at 28 degree of freedom. Hence the research hypothesis H is accepted at 0.05 level of significance.

According to H2 there is significant difference between problem faced in experimental and control group after intervention t = 20.8 as the obtained value is

greater than the table value (2.0) at 28 degree of freedom. Hence the hypothesis accepted.

According to H3 there is significant difference in psychological feeling of experiment and control group after intervention t = 17 as the obtained value is greater than (2.05) table value. So the hypothesis H2 is accepted.

CONCLUSION

The findings of the study concludes that the deep breathing exercise have an effect on hot flushes symptoms. It gives deep relaxation and prevent discomfort.

IMPLICATION

Nursing practice

Nurse play an important role in patient care. The finding of the study indicates that all the health team members should be encouraged to follow non-pharmacological treatment like deep breathing exercise during hot flushes to menopausal women which promote comfort and satisfaction.

Nursing education

The finding of the study emphases the effect of deep breathing exercise during hot flush experiences. The importance of non-pharmacological management for hot flushes can be taught nursing staff and students. This will help the menopausal women in community and prevent them from side effects.

Nursing administration

Institutions providing community service should encourage the menopausal women in doing deep breathing exercise and develop teaching program on non – pharmacologicas management of hot flushes community.

RECOMMENDATION

- The study can be replicated on a larger sample for generalization of the findings.

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APPENDICES

APPENDIX – i

LETTER REQUESTING PERMISSION TO CONDUCT STUDY

To

The President,
Kodangipalayam Panchayat,
Coimbatore.

Respected Sir/Madam,

Sub: Letter requesting permission for conducting the study

Ms. A.G Vincy Bala is a post graduate nursing student of our institution. She has selected the below mentioned topic for her research project to be submitted to Dr. MGR Medical university of health science, as a partial fulfillment of Master of science in Nursing Degree.

"A Study to Assess the Effectiveness of Deep Breathing Exercise on Hotflushes Experience of Menopausal Women in a Selected Community Area in Sulur at Coimbatore"

Regarding this project, she is in need of your esteemed help and co-operation as she is interested in conducting a study of her project, in the community during the month of July 2009. I request you to kindly permit her to conduct the proposed study and provide her the necessary facilities.

The student will furnish details of the study, if required. Please do the needful and oblige.

Thanking You,

Yours faithfully,

PRINCIPAL

Place:

Date:

APPENDIX – ii

REQUISITION LETTER FOR CONTENT VALIDITY

From

A.G. VINCY BALA
M.Sc(N), Student,
R.V.S. College of Nursing,
Sulur, Coimbatore.

To

Through the Principal,

Respected Madam,

Sub : Letter requesting opinion and suggestion of experts for establishing content validity of the tool.

I am a M.Sc (N) Student in R.V.S. College of Nursing, Sulur, Coimbatore in the speciality of Obstetrics and Gynecology Nursing. As per the requirement for the partial fulfillment of the Nursing degree under Tamil Nadu Dr. MGR Medical University. I have selected the following topic for dissertation.

"A Study to Assess the Effectiveness of Deep Breathing Exercise on Hotflushes Experience of Menopausal Women in a Selected Community Area in Sulur at Coimbatore"

I kindly request you to go through the research tool and validate against criteria given in the sheet.

Thanking you Yours faithfully,

A.G. VINCY BALA

Enclosure :

1. Objectives of the study
2. Hypothesis
3. Description of the tool
4. Research Tool
5. Criteria rating for validation
6. Content Validation certificate.

Place:

Date:

APPENDIX - iii

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool developed by Ms. Vincy Bala MSc., IInd year student, RVS College of Nursing, RVS Educational Trust, Sulur, Coimbatore to collect data on the problem.

"A Study to Assess the Effectiveness of Deep Breathing Exercise on Hotflushes Experience of Menopausal Women in a Selected Community Area in Sulur at Coimbatore"

Is validated by the undersigned and she can proceed with this tool to conduct the main study.

Name & Address :

Signature :

Seal :

Date :

APPENDIX - iv

CRITERI RATING SCALE FOR VALIDATING INTERVIEW SCHEDULE

Kindly go through this tool, please give your views regarding clarity, relevance, adequacy and remark.

PART - 1

DEMOGRAPHIC PROFILE

ITEMS	CLARITY	RELAVANCE	ADEQUACY	REMARKS
1				
2				
3				
4				
5				
6				
7				
PART II HOT FLUSHES EXPERIENCE				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
PART III LESSON PLAN				
1				
2				

3				
4				
5				
6				
PART IV OPINION OF MENOPAUSAL WOMEN ON EXERCISE				
1				
2				
3				
4				
5				

APPENDIX - v

REQUESTION LETTER FOR CO-GUIDE

From :
A.G Vincy Bala
Msc. (N) student
R.V.S. College of Nursing
Sulur, Coimbatore.

To,
Dr. Latha Prasanna
Consultant obstetrician and gynecologist,
R.V.S. Hospital, Sulur.

Through the Principal

Respected Madam,

SUB : **Request for Co Guide**

I wish to state that I am Mrs Kavitha.T Master of Nursing student of RVS College of Nursing Sulur, Coimbatore in the specialty of Obstetric and Gynecology Nursing. As per the requirement for partial fulfillment of the Nursing Degree under the Tamilnadu Dr. M.G.R Medical University, I have selected the following topic for dissertation.

"A Study to Assess the Effectiveness of Deep Breathing Exercise on Hotflushes Experience of Menopausal Women in a Selected Community Area in Sulur at Coimbatore"

Regarding this Iam in need of your valuable help and cooperation by providing services to be a Co Guide for my study.

I humbly request your good self to consider the same and do the needful.

Thanking you

Yours sincerely,

(A.G VincyBala)